Number One Air Conditioning Maker

Carrier

Division of Carrier Corporation

Carrier Parkway • Syracuse N Y 13221

Installation, Start-Up and Service Instructions

50CD/CH
008

Single-Package Cooling Units

SAFETY CONSIDERATIONS

Installation and servicing of air conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair or service air conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air conditioning equipment, observe precautions in the literature, tags and labels attached to the unit and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

INSTALLATION

Unit Rigging and Placement — Inspect for transportation damage. File any claim with transportation agency. Spreader bars are not required if top crating is left on unit. Keep unit upright. Do not drop unit (see Fig. 1). Rollers may be used to move unit across a roof. Level by using frame as a reference. Leveling tolerance is ± 1/16-in. per linear foot in any direction. This is necessary for condensate drain to function properly. Table 1 shows unit weight. See Fig. 1 for rigging details.

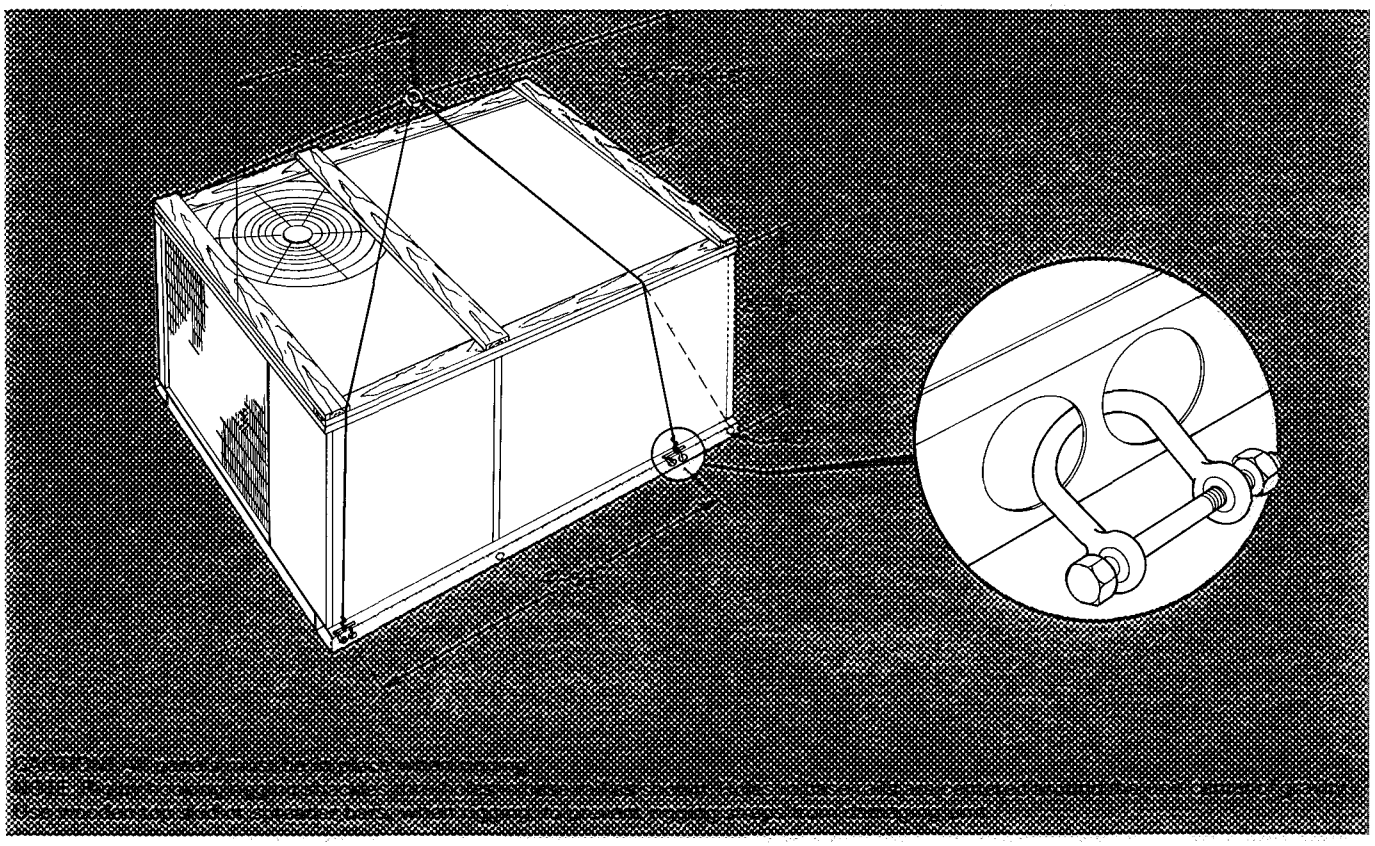


Fig. 1 — Rigging Details

© Carrier Corporation 1983

Table 1 — Physical Data

UNIT SIZE	50CD/CH008
OPERATING WEIGHT (lb)	
Unit	730
With Economizer*	790
Roof Curb* — 14 in.	120
COMPRESSOR	
No. ...Type	1 — BRE2 Copeland
Oil (oz)	124
REFRIGERANT (Capillary Control)	R-22
Charge (lb)	10 5
CONDENSER COIL	Copper Tubes, Aluminum Fins
Rows	2
Fins/in.	13 9
Total Face Area (sq ft)	15 6
CONDENSER AIR FAN	
Nominal Cfm	4100
No. ...Diameter (in.)	1 22
Motor Hp (1075 Rpm)	1/2 Hp
EVAPORATOR COIL	Copper Tubes, Aluminum Fins
Rows	3
Fins/in.	13 9
Total Face Area (sq ft)	8 2
EVAPORATOR AIR FAN	
Quantity...Size (in)	1 12 x 9
Nominal Cfm	3000
Minimum and Maximum Cfm (Standard Motor)	2250 - 3650
(Optional Motor)	2250 - 3750
Rpm Range	652 - 924
Maximum Allowable Rpm	924
Motor Pulley Pitch Diameter (in.)	2 4-3 4
Fan Pulley Pitch Diameter (in)	12 7
Belt No. ...Type	1 A51
Speed Change per Full Turn of Moveable Pulley Flange (Rpm)	54
Moveable Pulley Maximum Full Turns from Closed Position	5
Factory Setting — Full Turns Open	3
Factory Speed Setting (Rpm)	760
Motor Hp (Service Factor) Standard	1 Hp (1 4)
Optional	1 5 Hp (1 3)
HIGH-PRESSURE SWITCH	
Cutout (psig)	426 ± 7
Reset (psig)	320 ± 20
LOW-PRESSURE SWITCH (Liquid Line)	
Cutout (psig)	27 ± 4
Reset (psig)	67 ± 7
OUTDOOR AIR INLET SCREENS*	
Economizer, No . Size (in)	2 19 x 31 x 1/2 — None on 50CH008
RETURN AIR FILTERS* (Type)	Disposable — None on 50CH008
No. ...Size (in.)	2 16 x 20 x 1
	2 20 x 20 x 1

*50CD008 only

Accessory Roof Curb (50CD008) — See Fig. 2. Assemble and install in accordance with instructions shipped with curb. Install insulation, cant strips, roofing and flashing as required. *Ductwork must be attached to curb.*

Unit gasketing to roof curb is critical for water integrity. Make sure that gasketing material shipped with the roof curb has been properly installed as indicated in Fig. 2.

Roof Mount — Check building codes for weight distribution requirements. Table 1 shows unit weight.

Slab Mount (50CH008) — Provide a level concrete slab the same width as unit that extends to ends of base rails only. The slab should be 8 in. thick with 4 in. above grade. Install a gravel apron in front of outdoor air inlet to prevent grass and foliage from obstructing airflow. Allow a minimum of 6 in. under outdoor coil for condensate drainage. In areas where prolonged sub-freezing temperatures or heavy snow occur, increase clearance to 12 in. minimum, 18 in. maximum.

Positioning — Position unit to prevent snowdrifts from blocking condenser coil and outdoor air intake (50CD008). Provide clearance around and above unit for airflow, safety and service access.

Do not install unit in an indoor location. Do not locate unit air inlets near exhaust vents or other sources of contaminated air.

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

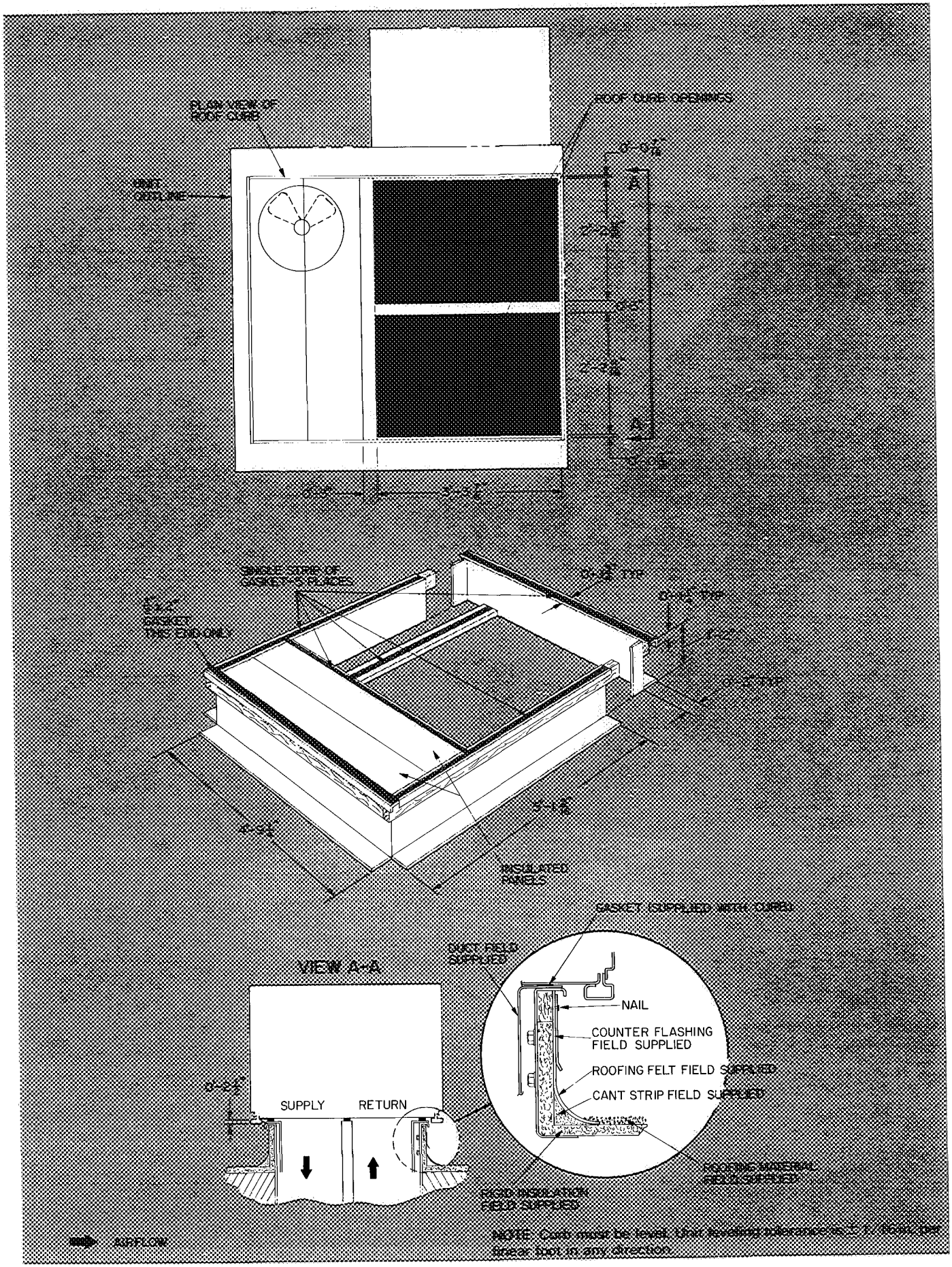


Fig. 2 — 50CD008 Roof Curb Dimensions and Details

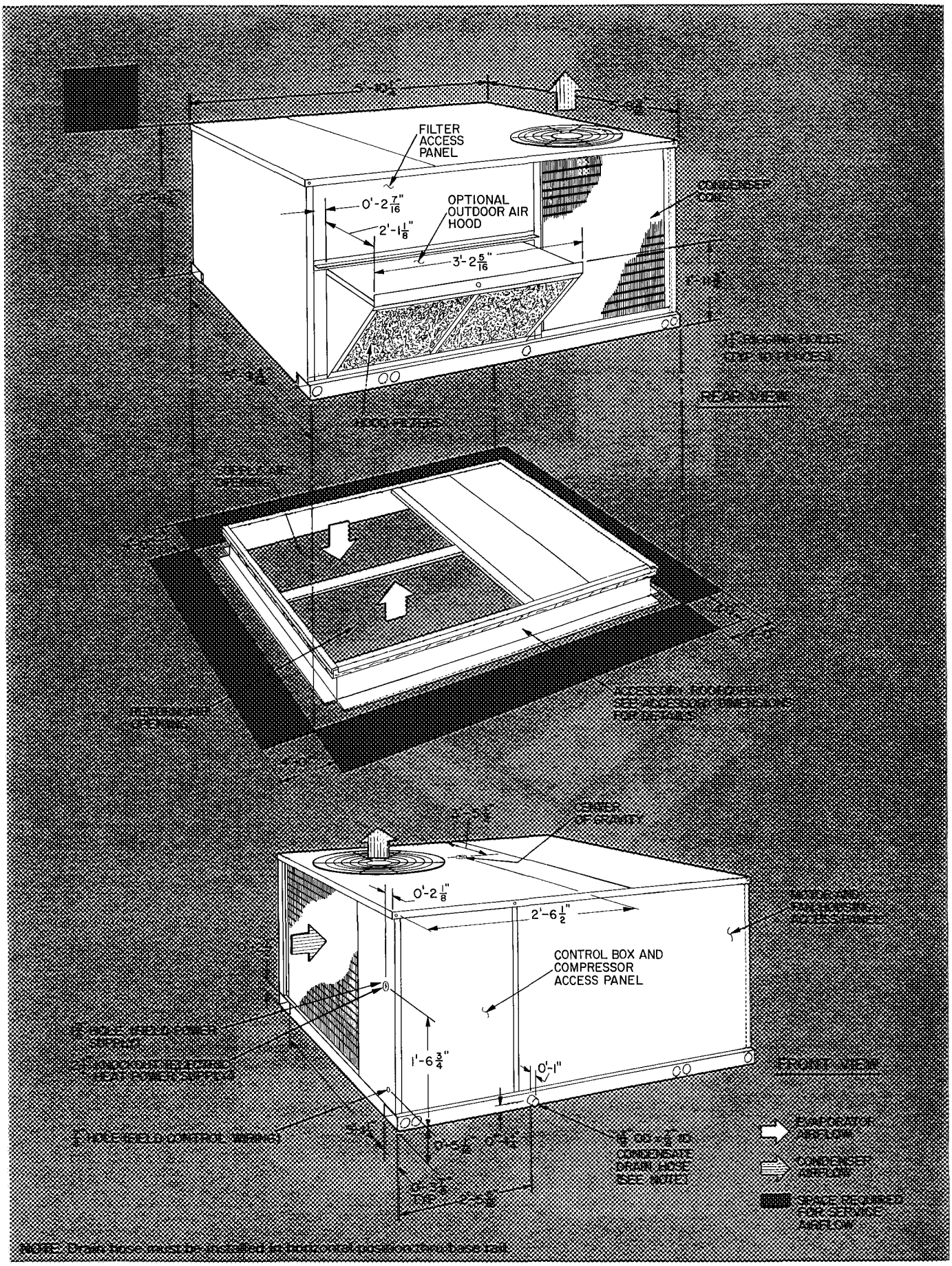


Fig. 3 — 50CD008 Base Unit Dimensions

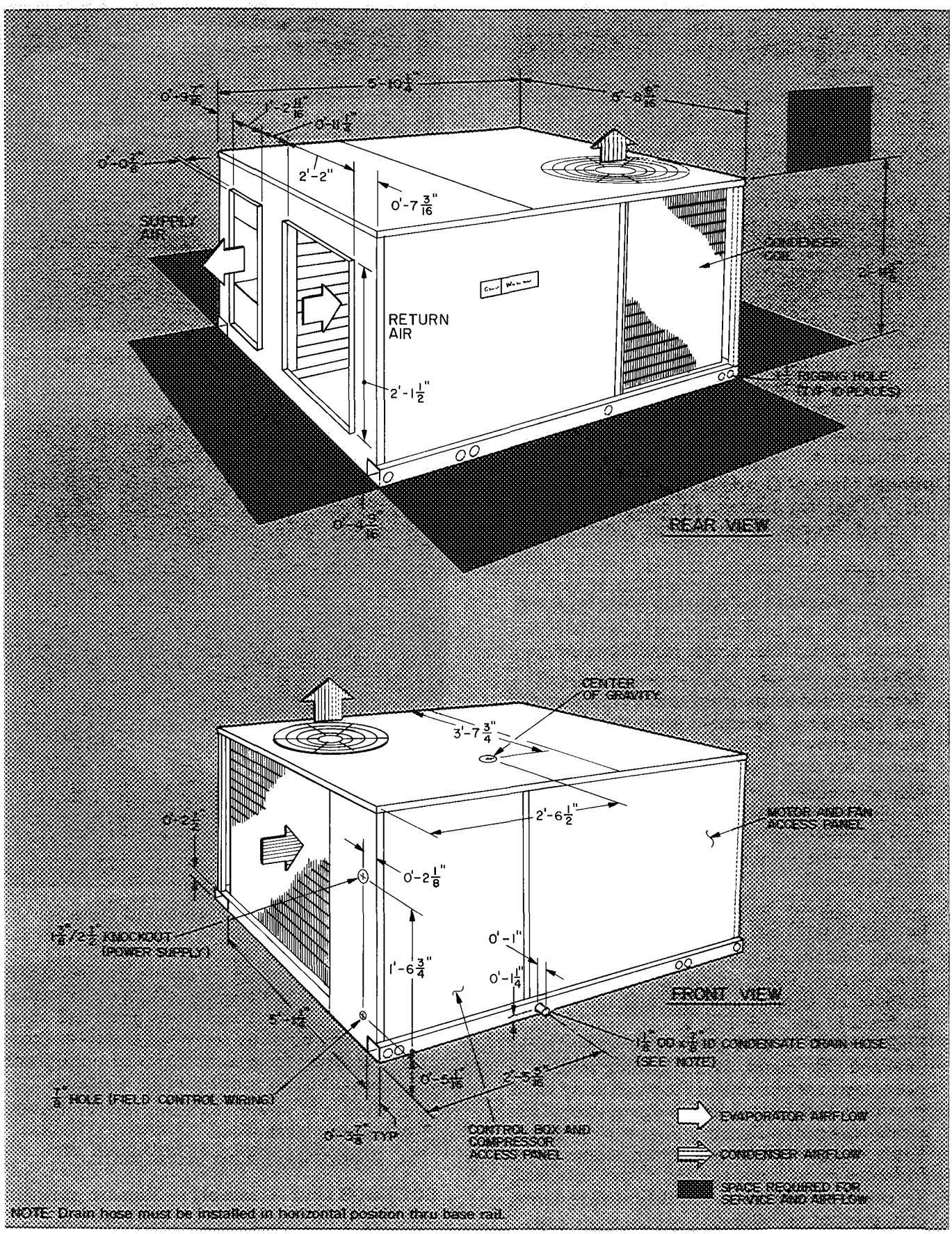


Fig. 4 — 50CH008 Base Unit Dimensions

Outdoor Air Intake (50CD008) — The 50CD can be equipped with an optional outdoor air damper or an economizer that mixes outdoor air with return air.

Field-Fabricated Ductwork

50CD — See Fig. 3. Secure all ducts to roof curb and building structure before unit is placed on curb. *Do not connect ductwork to unit.*

Cabinet return air static shall not exceed 0.35 in. with economzier or 0.40 in. without economizer.

50CH — See Fig. 4. Secure all ductwork to flanges on unit supply air and return air openings and building structure.

50CD/CH — Insulate and weatherproof all external ductwork, joints and roof/wall openings with flashing and mastic in accordance with applicable codes. Insulate ducts passing thru an unconditioned space and cover with a vapor barrier.

A minimum clearance is not required for any air duct installation.

Optional Manual Outdoor Air Damper (50CD 008) — Optional outdoor air damper is shipped with hood broken down in unit filter section. See Fig. 5.

ASSEMBLY

1. Remove protective polyethylene cover from unit. See Fig. 5.
2. Remove upper filter access panel (save screws). See Fig. 5.
3. Remove hood parts from unit evaporator fan and filter area. Assemble hood top and side plates as shown in Fig. 6. *Do not attach hood to unit at this time.*
4. Adjust outdoor air damper blade to desired setting for outside air intake by releasing linkage rod setscrew and adjusting linkage rod. See Fig. 7. Secure damper blade in desired position with setscrew.
5. Remove screws holding manual outdoor air damper to unit. See Fig. 8.
6. Install outdoor air hood assembly, using screws from step 5. These screws secure the manual outdoor air damper assembly and the outdoor air hood to unit. See Fig. 9.
7. Slide outdoor air inlet screens into screen tracks on hood side plates. While holding screens in place, fasten screen retainer to hood using screw provided. Make sure bottom edge of screens rest inside base rail as shown in Fig. 9.
8. Replace upper access panel with screws saved from step 2.
9. To check percentage of ventilation air entering unit, proceed as follows:
   a. If unit power is on, turn it off.
   b. Jumper red and black wires in 24-v barrier in main control box. See Fig. 10.
   c. Turn on unit power to energize evaporator (indoor) fan.

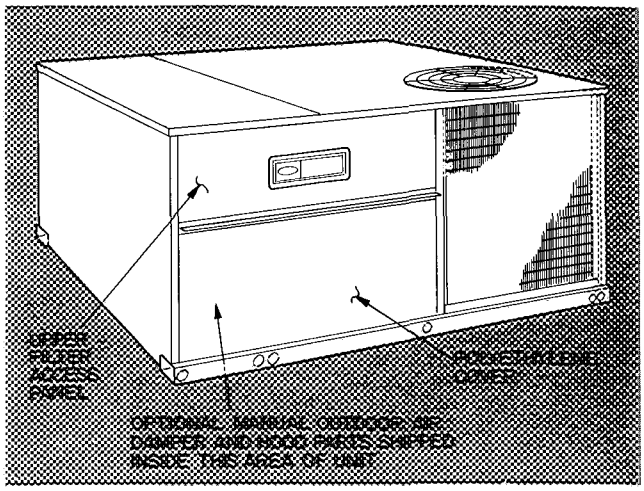

UPPER FILTER ACCESS PANEL
PERFORATED OUTER
OPTIONAL MANUAL OUTDOOR AIR DAMPER AND HOOD PARTS SHIPPED INSIDE THIS AREA OF UNIT

Fig. 5 — Access Panel Location

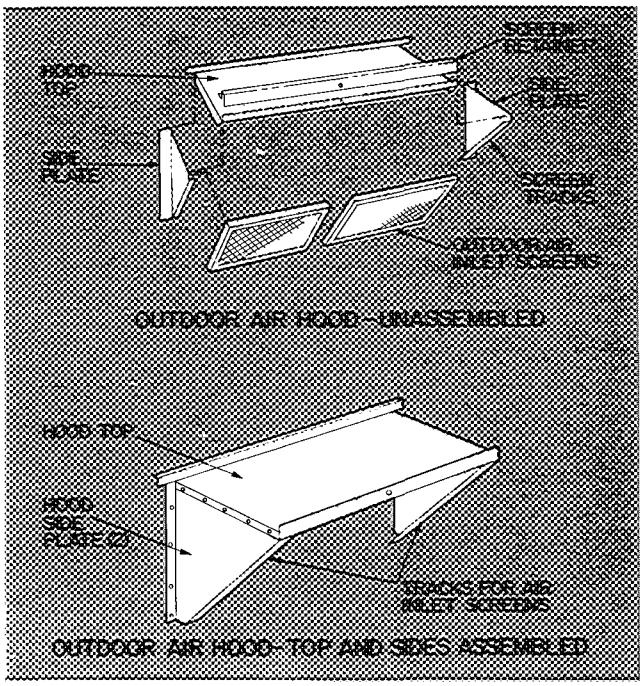


Fig. 6 — Outdoor Air Hood Details

   d. Check percentage of ventilation air entering unit. If percentage varies from that specified, remove upper filter access panel and adjust damper blade as described in step 4. Procedure may have to be repeated until proper percentage of ventilation air is attained.
   e. Turn off power. Remove jumper between red and black wires.
   f. Replace upper filter access panel.

50CH008 Unit Assembly — Remove packaging and tape from evaporator fan drive system.

Evaporator Air Fan — Evaporator fan uses a belt-drive motor which provides high static at nominal airflow. The standard motor provides approximately 0.95 in. static at nominal cfm and the alternate motor provides 1.0 in. static at nominal cfm.

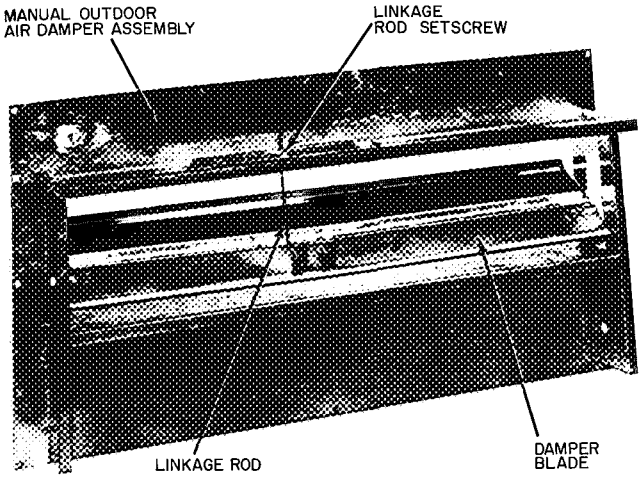


Fig. 7 — Damper Blade Adjustment

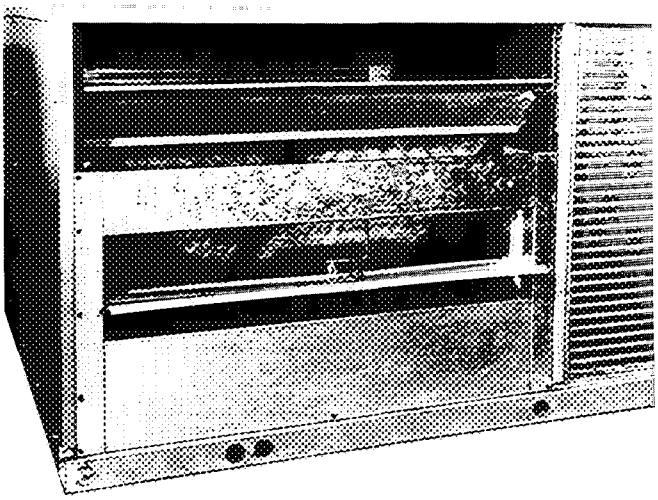


Fig. 8 — Manual Outdoor Air Damper

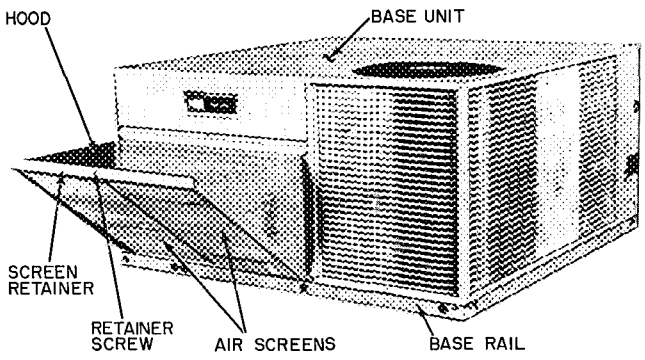


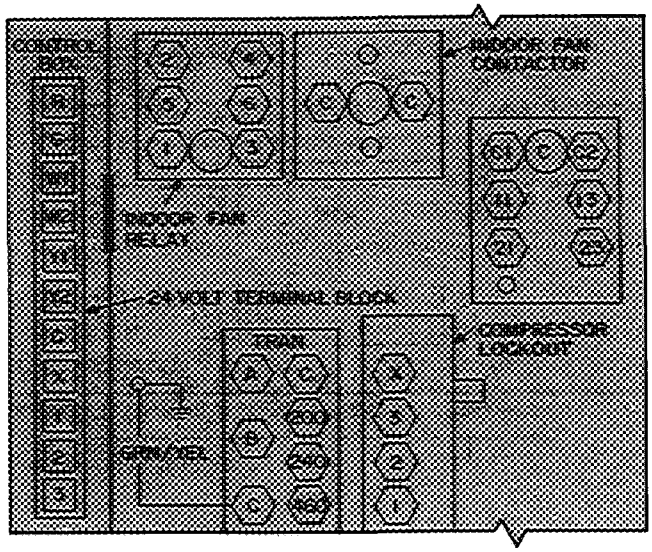
Fig. 9 — Outdoor Air Hood Assembled to Base Unit (50 Series Shown)

Condenser Air Fan and Motor are factory set. Refer to Service, Condenser Air Fan Adjustment, as required.

Condensate Drain — See Fig. 3 and 4 for drain location. A 7/8-in. ID preformed drain hose is shipped clamped to the evaporator basepan. At installation, reroute hose so that it passes thru the hole in the evaporator basepan and the unit base rail.

When installed properly, the hose protrudes thru the base rail about 3 in. on the 50CD008. On the 50CH008, hose protrudes thru the side of the base rail about 1 inch.

Replace clamp over the hose where it passes thru the basepan. This keeps the hose level. Use a trap at least 4 in. deep and provide protection for trap against freeze-up.



→ **Fig. 10 — Control Box Details**

Field Power Supply — See Fig. 11 and Table 2. Unit is factory wired for voltage shown on nameplate. *On 208-volt installations, reconnect all transformers to 208- (200-) volt tap. Refer to unit label diagrams.* Pigtails are provided for field service on units without electric heat (use factory-supplied splices or UL-approved copper/aluminum connector). Units with electric heat are provided with terminal block in single point box.

All field wiring must comply with National Electrical Code and local requirements.

Run power lines thru condenser coil end panel to terminal connections as shown on unit wiring diagram and in Fig. 3 and Fig. 4.

→ Operating voltage to compressor must be within voltage range indicated on unit nameplate. On 3-phase units, voltages between phases must be balanced within 2% and the current must be balanced within 10%.

Use the following formula to determine the % voltage unbalance.

$$\% \text{ Voltage Unbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

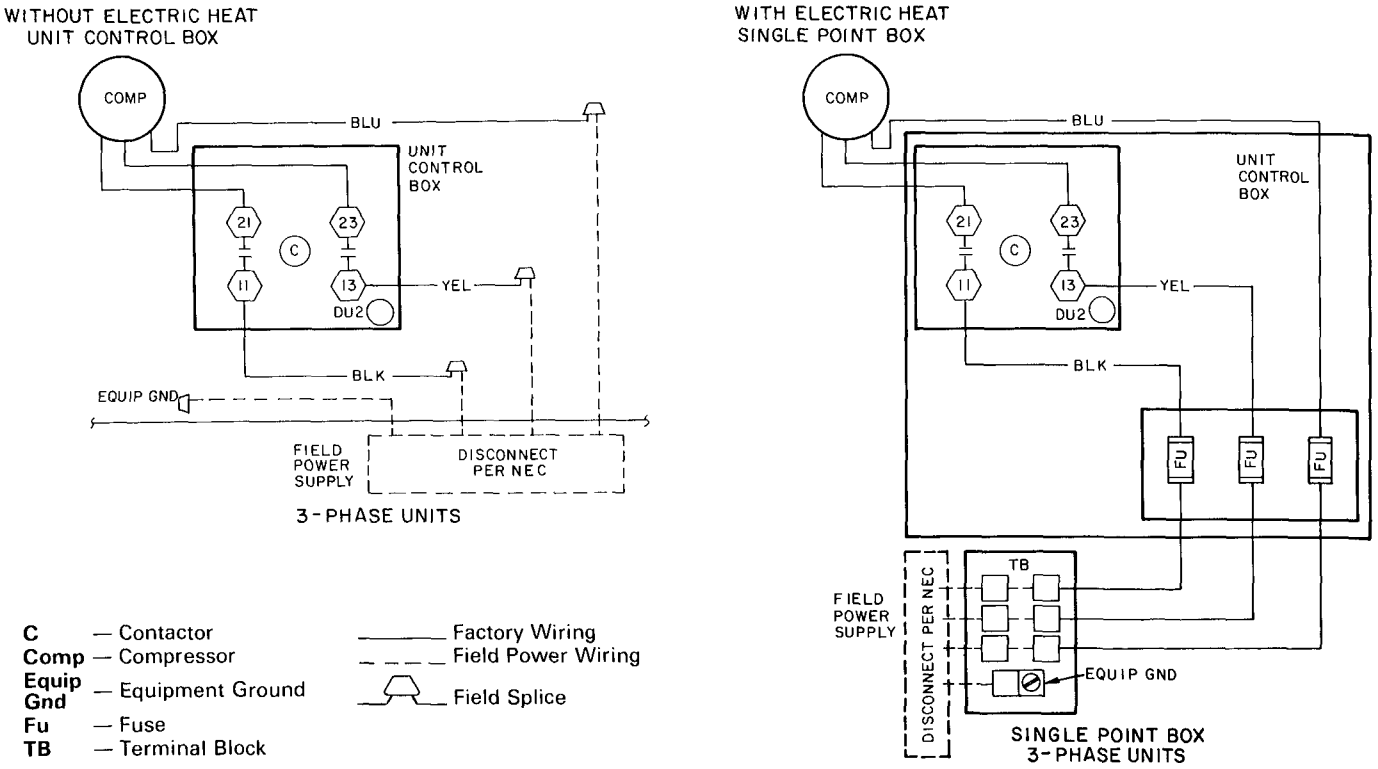


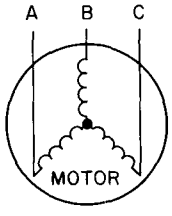
Fig. 11 — Field Power Wiring Connections

Table 2 — Electrical Data

50CD/CH008 NOMINAL V-PH-HZ	VOLTAGE RANGE		COMPR		OFM	IFM		ELECTRIC HEATERS				POWER SUPPLY			
								50CD008		50CH008		50CD008		50CH008	
	Min	Max	RLA	LRA	FLA	Hp	FLA	Kw	FLA	Kw	FLA	Min Ckt	MOCP	Min Ckt	MOCP
												Amps			
208/230-3-60	187	254	32 5	183	2 9	1	8 0	—		—		55/55	60/60*	55/55	60/60*
								9 3	20-23	9 3	20-23	55/55	60/60	55/55	60/60
								18 6	40-46	15 8	33-38	60/70	60/70	55/60	60/60
								28 1	59-68	31 5	68-76	85/95	80/90	95/105	90/100
460-3-60	414	508	15 2	91 1	1 5	1	2 9	—		—		25	35*	25	35*
								9 7	11 7	9 7	11 7	25	35	25	35
								16 0	19 3	16 0	19 3	30	35	30	35
								19 4	23 4	31 5	37 9	40	35	55	45
								29 6	35 7			50	45		

FLA — Full Load Amps
Hp — Horsepower
IFM — Indoor Fan Motor
LRA — Locked Rotor Amps
MOCP — Maximum Overcurrent Protection
OFM — Outdoor Fan Motor
RLA — Rated Load Amps
*Fuse only

Example: Supply voltage is 460-3-60.



AB = 452 volts
BC = 464 volts
AC = 455 volts

$$\text{Average Voltage} = \frac{452+464+455}{3}$$

$$= \frac{1371}{3} = 457$$

Determine maximum deviation from average voltage:

(AB) 457 – 452 = 5 volts
(BC) 464 – 457 = 7 volts
(AC) 457 – 455 = 2 volts

Maximum deviation is 7 volts

Determine % voltage unbalance:

$$\%\text{ Voltage Unbalance} = 100 \times \frac{7}{457} = 1.53\%$$

This amount of phase unbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase unbalance is more than 2%, contact your local electric utility company immediately.

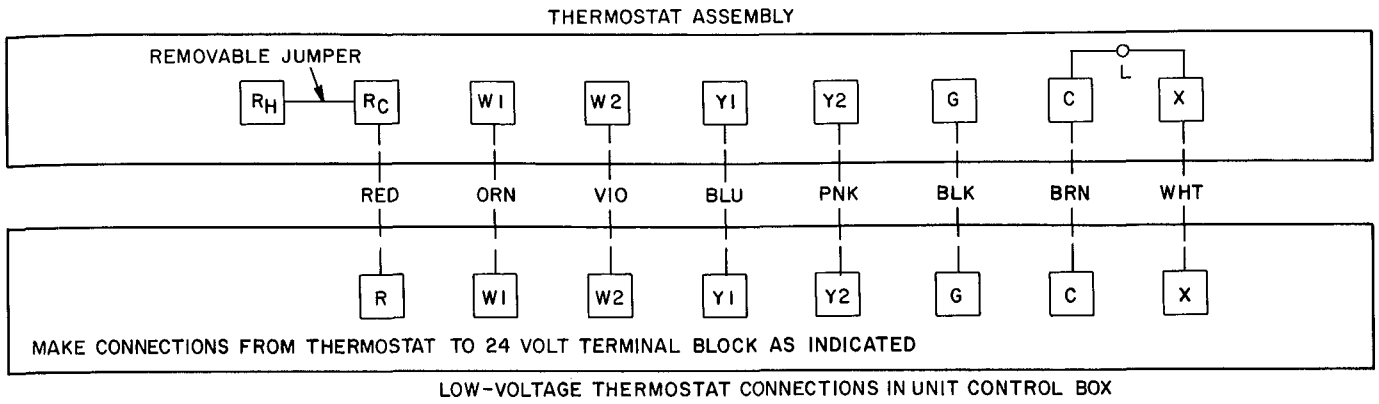


Fig. 12 — Field Control Thermostat Wiring

Unit failure as a result of operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components. Such operation would invalidate any applicable Carrier warranty.

UNITS WITH ELECTRIC HEAT — When electric heat is installed, connect the field power wires to terminal block located in the single point box. The single point box is attached to the corner post, directly below the control box.

DISCONNECTS — A fused disconnect is required only on units without electric heat. When electric heat is installed, use a NEC disconnect of adequate size. Provide fusing for disconnect if required by local codes. The unit informative nameplate and Table 2 list electric heat fuse and wire amperage.

Field Control Wiring — Install a Carrier-approved accessory thermostat assembly according to installation instructions included with accessory. Locate thermostat assembly on a solid wall in the conditioned space to sense average temperature.

THERMOSTAT WIRES — Use 18 gage for 0- to 50-ft long wires, 16 gage for 50- to 75-ft wire lengths. Route the control wires thru hole provided in the corner post (see Fig. 3 and 4) and then feed wires thru a raceway built into the corner post. Route wires from the raceway into the 24-v barrier located on the left side of the control box. Make connections as shown in Fig. 12.

Set heat anticipator settings as indicated below.

Heat Anticipator Settings

1st Stage	9
2nd Stage with 2 Heaters and 2-Stage Heat Thermostat*	3

*Applies only to 50CD

Settings may be changed slightly to provide a greater degree of comfort for a particular installation.

Refer to accessory remote control panel instructions as required.

Return Air Filters (50CD008) — Make sure correct filters are installed in filter tracks. See Table 1. Do not operate unit without return air filters.

Outdoor Air Inlet Screens (50CD008) — Outdoor air inlet screen(s) must be in place before operating unit.

Economizer Section (50CD008) — Optional economizer is shipped with hood broken down in unit filter section. See Fig. 13.

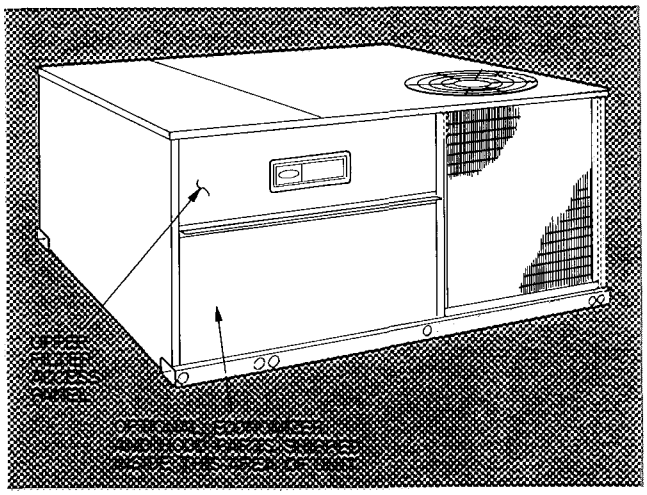


Fig. 13 — Access Panel Location

ASSEMBLY

1. Remove protective polyethylene cover from unit. See Fig. 13.
2. Remove upper filter access panel (save screws). See Fig. 13.
3. Remove hood parts from unit evaporator fan and filter area. Assemble hood top and side plates as shown in Fig. 14. *Do not attach hood to unit at this time.* Put aside baffle, screen retainer and retainer screw for later assembly.
4. Determine if vent air is required in building to be conditioned. If so, check for percentage of

vent air needed and record quantity for vent adjustment in step 11.

5. Remove jumper plug from base unit receptacle and discard. Insert economizer plug into receptacle. See Fig. 15.

   Steps 6 thru 8 involve releasing and adjusting indoor damper blades from factory set position.

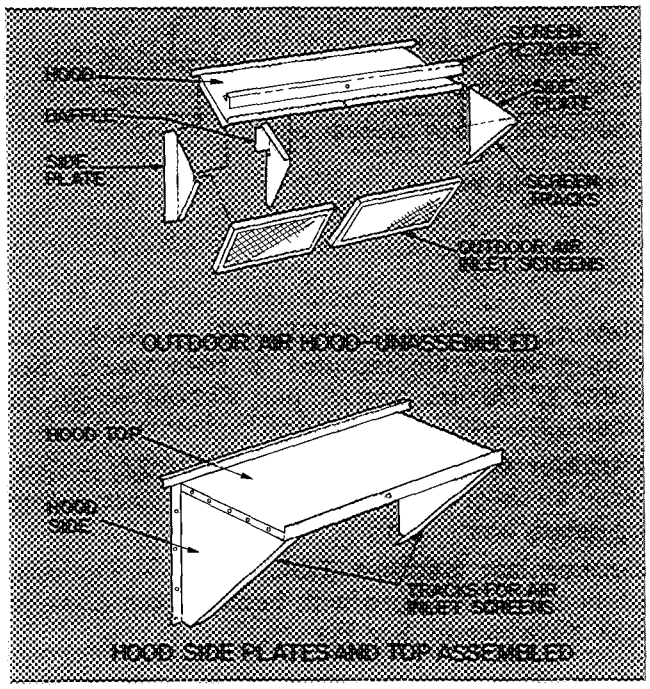
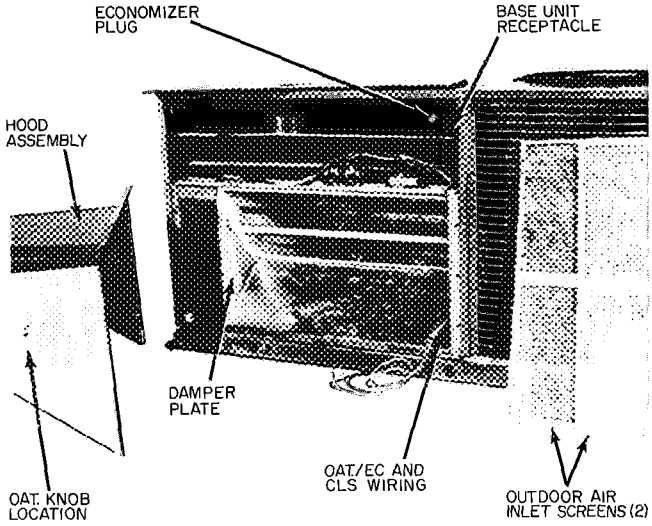


Fig. 14 — Outdoor Air Hood Details



CLS — Cooling Lockout Switch
EC — Enthalpy Control
OAT. — Outdoor Air Thermostat

Fig. 15 — Economizer Installed in Unit

6. Release indoor blades' drive linkage by loosening linkage connector setscrew at indoor crankarm on drive shaft. See Fig. 16.

   Remove pink wire from economizer damper motor terminal D and temporarily tape bare wire end.

   Remove violet wire from economizer damper motor and connect to terminal D on economizer damper motor. See Fig. 17.

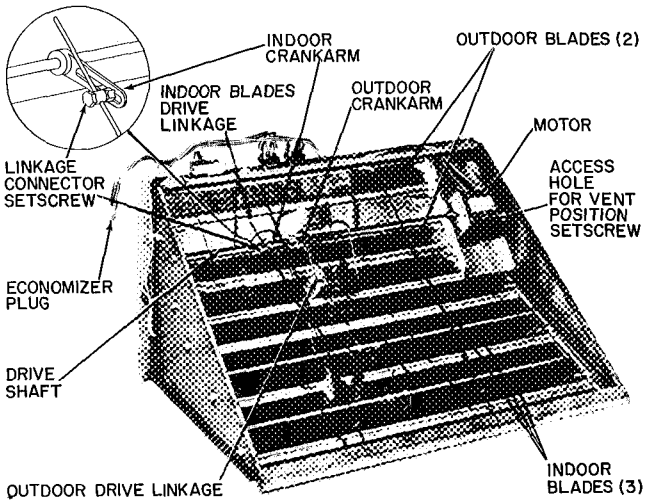


Fig. 16 — Economizer Details

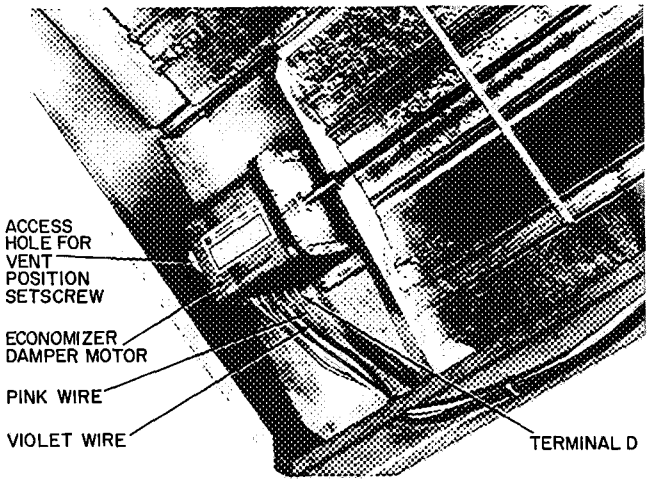


Fig. 17 — Economizer Motor Connections

7. Jumper red (base unit 24-v power) and black (evaporator fan motor) wires in 24-volt control box compartment. See Fig. 10.

   Turn on base unit power to energize evaporator fan. The economizer's outdoor blades should open completely.

8. Adjust the indoor blades' drive linkage so that indoor blades are fully closed. Tighten the linkage connector setscrew. Turn off base unit power. Reconnect pink and violet wires to economizer motor, as shown in Fig. 17.

9. If vent air is required, leave red and black wires jumpered. If vent air is not needed, remove jumper between red and black wires.

10. Fasten baffle to left side of damper plate with round head screws provided. See Fig. 18.

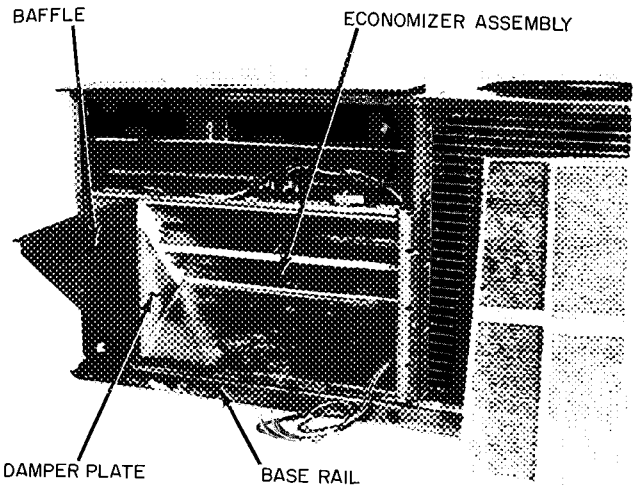


Fig. 18 — Baffle Installation Details

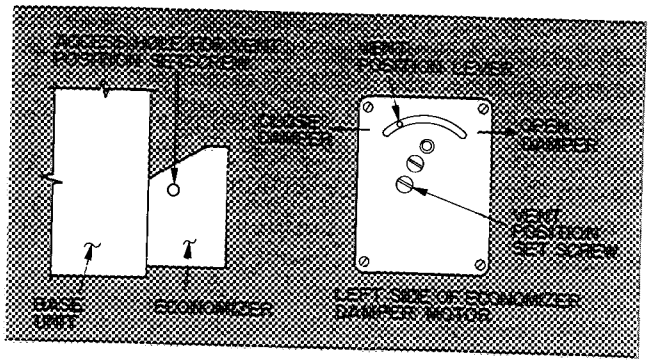
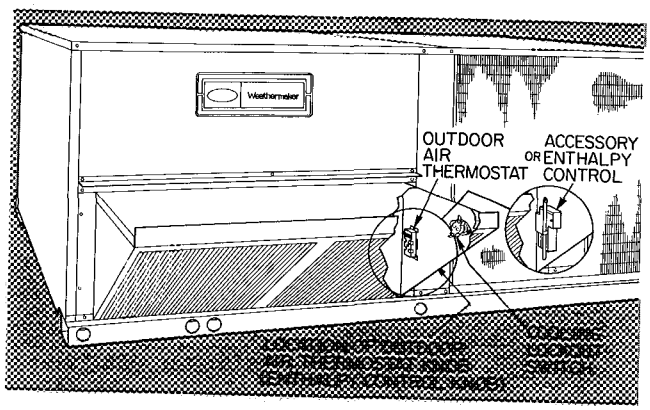
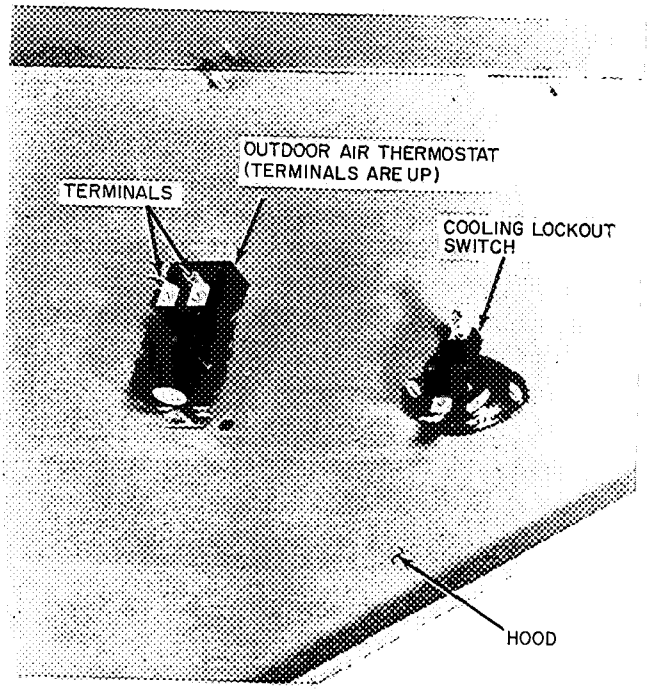


Fig. 19 — Vent Position Setting Details

11. If vent air is not required, go on to step 12. If vent air is required, proceed as follows:
    a. Turn on base unit power. This energizes the evaporator fan motor.
    b. Slide economizer out of unit so that access hole to vent position setscrew is visible. See Fig. 19.
    c. Adjust vent opening by loosening vent position setscrew on left side of economizer damper motor and setting vent position lever to adjust damper. See Fig. 19. Move vent position lever back toward evaporator coil to close damper or forward to open damper. When adjustment is completed, retighten setscrew.
    d. Turn off base unit power and remove jumper from red and black wires.
    e. Slide economizer assembly back into unit.
12. Remove tape from outdoor air thermostat (OAT.) and cooling lockout switch (CLS), and fasten to inside of hood with screws and speed clips provided. Make sure terminals on OAT. are up. See Fig. 20.





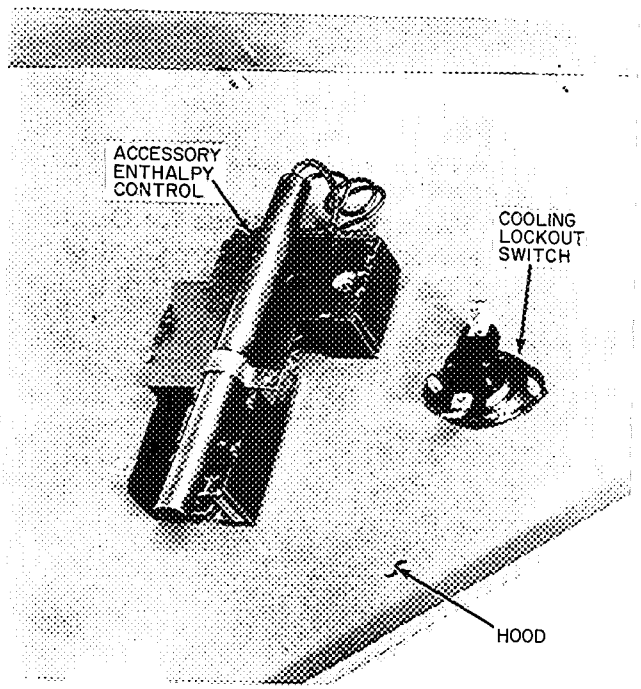
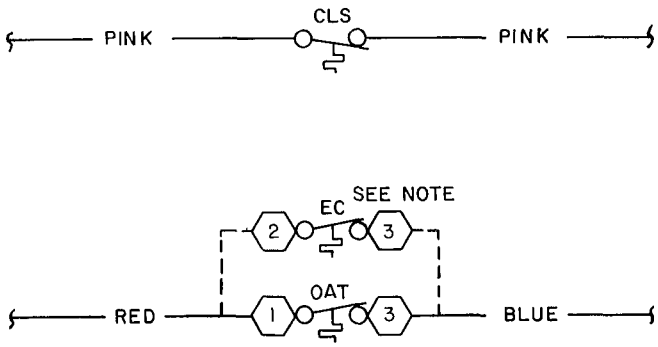


Fig. 20 — Outdoor Air Thermostat/ Enthalpy Control and Cooling Lockout Switch Installation

13. Fasten hood top and side plate assembly (Fig. 9) and economizer to unit with screws supplied. Before attaching, make sure bottom of hood assembly is resting on top of unit base rail.
14. Place knob supplied with accessory economizer on OAT. See Fig. 20. Set for 3 degrees below indoor room thermostat setting.

    If accessory enthalpy control (EC) (Fig. 20) is used in lieu of OAT., refer to instructions shipped with accessory enthalpy control for installation and adjustment.
15. Connect OAT./EC and CLS per unit label. See Fig. 21.

    Connect 2 economizer wires to each switch with quick-connects. Unit connecting wires are shipped taped on outdoor blade. See Fig. 15.
16. Slide outdoor air inlet screens in hood screen tracks. Secure screens with screen retainer across hood front. Secure screen retainer with screw provided. See Fig. 22.
17. Replace upper filter access panel with screws saved from step 2.
18. Turn base unit power on.



CLS — Cooling Lockout Switch
EC — Enthalpy Control
OAT. — Outdoor Air Thermostat

NOTE: When Enthalpy Control (EC) is installed, outdoor air thermostat (OAT) is removed from economizer

Fig. 21 — Wiring Connections for Outdoor Air Thermostat/or Enthalpy Control and Cooling Lockout Switch

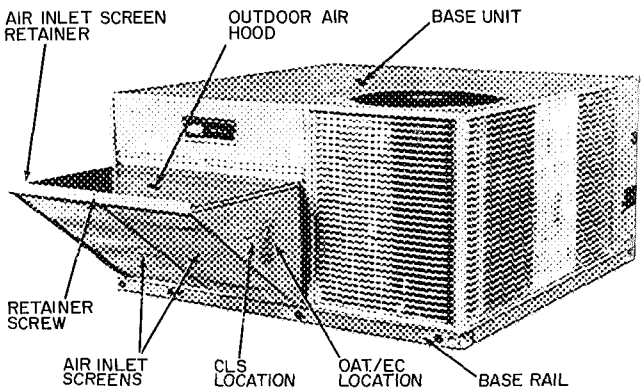


Fig. 22 — Economizer and Outdoor Air Hood Assembled to Unit

START-UP

Unit Preparation — Make sure unit has been installed in accordance with installation instructions and applicable codes.

Compressor Mounting — Compressors are internally spring mounted. Do not loosen or remove compressor holddown bolts.

Internal Wiring — Check all electrical connections in unit control boxes. . .tighten as required.

Refrigerant Service Valves — Each unit system has 2 Schrader type service ports, one on the suction line and one on the compressor discharge line. Be sure that caps on the ports are tight.

Crankcase Heater(s) are energized as long as there is power to the unit. Energize heater(s) 24 hours prior to base unit start-up.

Cooling — To start unit, turn on main power supply. Set system selector switch to COOL and fan switch at AUTO. Adjust thermostat to a setting below room temperature. Compressor starts on closure of contactor.

Check cooling effects at a setting above room temperature. Check unit charge. Refer to Refrigeration Charge in Service section.

Reset thermostat at a position above room temperature. Compressor will shut off.

TO SHUT OFF UNIT — Set system selector switch at OFF position or reset thermostat at a position above room temperature. Units are equipped with Cycle-LOC™ protection device. Unit shuts down on any safety trip, and indicator light on thermostat comes on. Check reason for safety trip.

Compressor restart is accomplished by manual reset at the thermostat by turning the selector switch to OFF and then to ON.

Heating — To start unit, turn on main power supply. Refer to Crankcase Heaters.

Set thermostat at HEAT and a setting above room temperature, fan at AUTO.

First stage of thermostat energizes the first-stage electric heater; second-stage electric heater elements if installed. Check heating effects at air supply grille(s).

TO SHUT OFF UNIT — Set system selector switch at OFF or set heating selector lever below room temperature.

Ventilation (Continuous Fan) — Set fan and system selector switches at ON and OFF, respectively. Evaporator air fan operates continuously to provide constant air circulation.

Economizer Operation (50CD008) — See pages 9 thru 12 for start-up and checkout procedures. If unit is equipped with modulating outdoor air control (economizer), it should operate as follows:

COOLING MODE — Evaporator and condenser fans and compressor energize when there is a call

for cooling and outdoor ambient temperature is above outdoor air thermostat setting. The economizer damper moves to VENT position.

Evaporator fan starts and economizer damper opens fully upon a first-stage call for cooling when outdoor ambient temperature is below the outdoor air thermostat setting. Compressor remains off.

Compressor is energized and mechanical cooling integrates with economizer cooling upon a second-stage call for cooling.

Mechanical cooling is locked out when ambient temperature is below 50 F.

Economizer damper modulates when mixed air temperature is below mixed air thermostat (non-adjustable) setting.

An economizer control thermostat (ECT) is located on the evaporator coil. This thermostat guards against abnormally low suction temperatures while operating mechanical cooling in conjunction with economizer. Low suction temperatures can lead to frosting on the evaporator coil. If frost buildup is detected, thermostat turns off economizer, thus closing the outdoor air damper. This raises air temperature entering the evaporator coil and melts frost. Once frost is melted, the economizer is re-energized.

During unoccupied periods, if a field-supplied night switch is used and is opened, the outdoor air damper closes.

HEATING MODE — Outdoor air damper stays at VENT position while evaporator air fan runs. If field-supplied night switch is used, the outdoor air damper closes when switch is open.

SERVICE

Cleaning — Inspect unit interior at the beginning of each heating and cooling season or as operating conditions require. Remove unit side panels for access to unit interior.

EVAPORATOR COIL

1. Turn unit power off.
2. Disconnect evaporator motor and electric heater(s) from main control box.
3. Remove top panel screws shown in Fig. 23.
4. Remove screws from base of evaporator fan housing and electric heater plate.
5. Pry up top panel to clear top of evaporator fan housing. See Fig. 23.
6. Remove evaporator fan housing, heaters and heater plate from unit.
7. Use commercial coil cleaner (Oakite 164), or dishwasher detergent in a pressurized spray cannister. Wash both sides of coil and flush with clear water. For best results, backflush towards return air section to remove foreign material. Flush condensate pan after completion.
8. Replace evaporator fan housing, electric heater(s) and all wires.

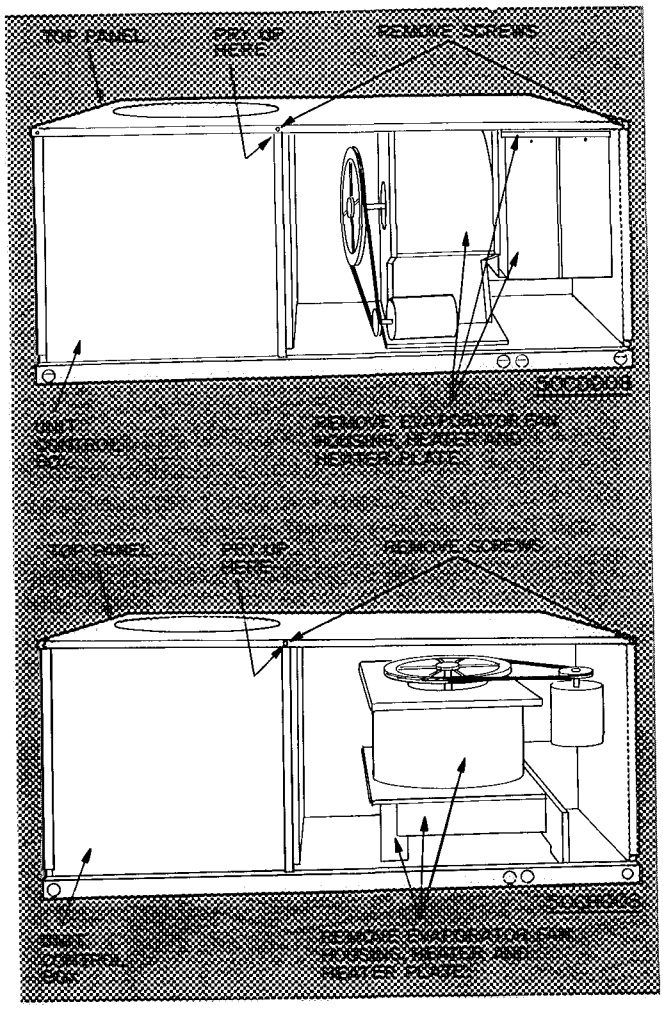

TOP PANEL
REMOVE SCREWS
REMOVE EVAPORATOR FAN HOUSING, HEATERS AND HEATER PLATE
TOP PANEL
REMOVE SCREWS
REMOVE EVAPORATOR FAN HOUSING, HEATERS AND HEATER PLATE

Fig. 23 — Removing Top Panel

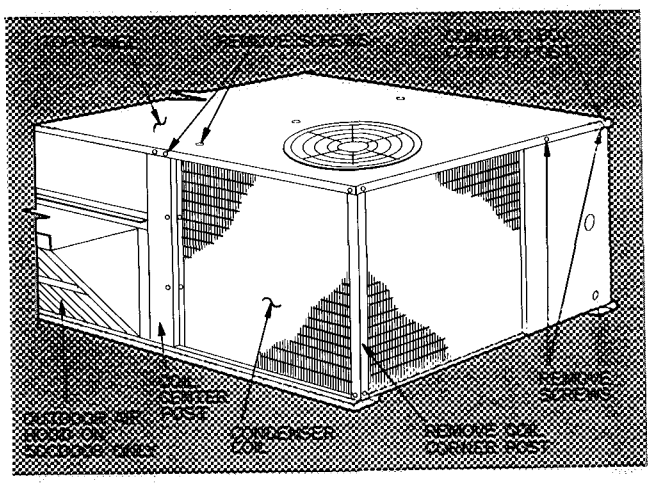


Fig. 24 — Cleaning Condenser Coil

CONDENSER COIL — Inspect coil monthly. Clean condenser coil annually, or as required by location or outdoor air conditions.

Fins are not continuous thru coil sections. Dirt and debris may pass thru first section, become trapped between the 2 rows of fins, and restrict condenser airflow. Shine flashlight thru coil to determine if dirt or debris has collected between coil sections.

Clean coil as follows:

1. Turn off unit power.
2. Remove top panel screws on condenser end of unit. Remove screws from coil side of coil center post. Do not remove center post.
3. Remove condenser coil corner post. See Fig. 24. To hold top panel open, place coil corner post between top panel and center baffle. See Fig. 25.
4. Remove device holding coil sections together at return end of condenser coil. Carefully separate the outer coil section 3 to 4 in. from the inner coil section. See Fig. 26.
5. Use a water hose or other suitable equipment to flush down between the 2 coil sections to remove dirt and debris. Clean the outer surfaces with a stiff brush in the normal manner.
6. Reposition the outer coil section, remove the coil corner post from between the top panel and center baffle. Secure the sections together. Install the corner post, coil center post and replace all screws.

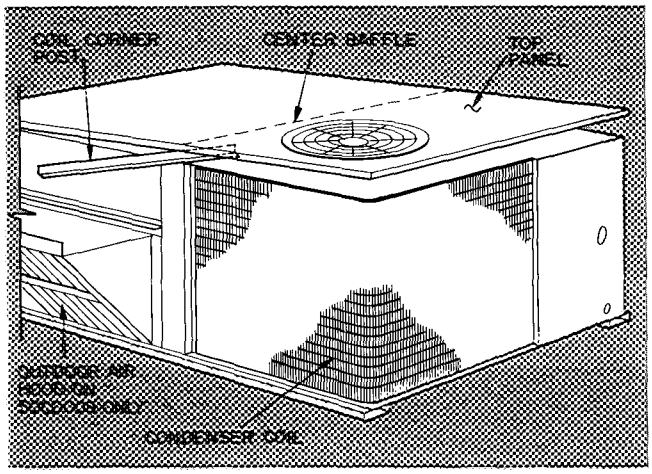


Fig. 25 — Propping Up Top Panel

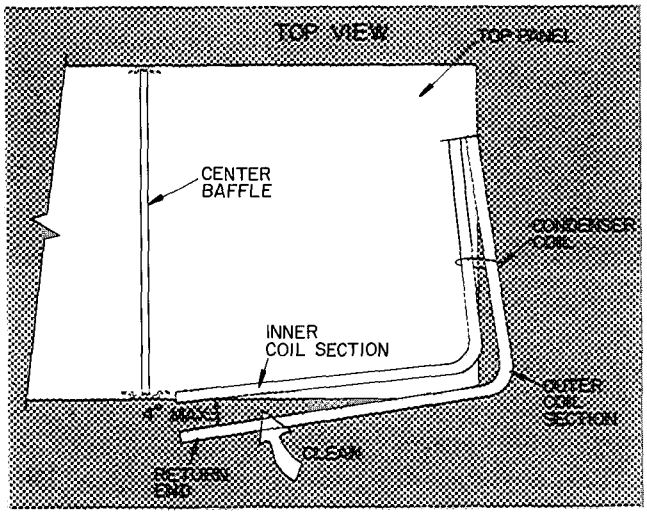


Fig. 26 — Separating Coil Sections

CONDENSATE DRAIN — Check and clean each year at start of cooling season. In winter, keep drain and trap dry or protect against freeze-up.

FILTERS — Clean or replace at start of each heating and cooling season, or more often if operating conditions require it.

OUTDOOR AIR INLET SCREENS (50CD008) — Clean screens with steam or hot water and a mild detergent. Do not use throwaway filters in place of screens.

Lubrication

COMPRESSORS — Each compressor is charged with correct amount of oil at the factory.

FAN MOTOR BEARINGS — No lubrication of condenser or evaporator fan motors is required for first 5 years of operation.

Annually thereafter, clean and repack bearings with a suitable bearing grease.

Condenser Air Fan Adjustment (Fig. 27) — Shut off unit power supply. Remove condenser fan assembly (grille, motor, motor cover and fan) and loosen fan hub setscrews. Adjust fan height as shown in Fig. 27. Tighten setscrews and replace condenser fan assembly.

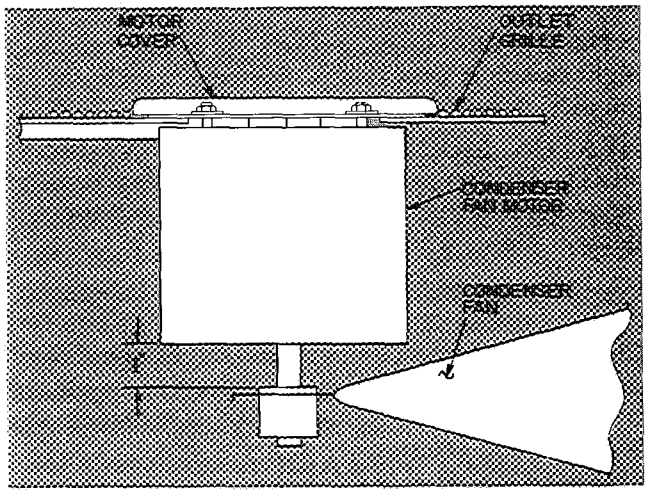


Fig. 27 — Condenser Air Fan Adjustment

Manual Outdoor Air Damper (50CD008) — If outdoor air damper blade adjustment is required, see Optional Manual Outdoor Air Damper section on page 6.

Economizer Adjustment (50CD008) — Refer to Economizer section under Installation.

Refrigerant Charge — Amount of refrigerant charge is listed on unit nameplate (also refer to Table 1). Refer to Carrier Standard Service Techniques Manual, Chapter 1, Refrigerants.

Unit panels must be in place when unit is operating during charging procedure.

NO CHARGE — Use standard evacuating techniques. After evacuating system, weigh in the specified amount of refrigerant. (Refer to Table 1.)

LOW CHARGE, COOLING — Using Cooling Charging Chart, Fig. 28, vary refrigerant until the conditions of the chart are met. Note the charging chart is different from type normally used. Chart is based on charging the units to the correct superheat for the various operating conditions. Accurate pressure gage and temperature sensing device are required. Connect the pressure gage to the service port on the suction line. Mount the temperature sensing device on the suction line and insulate it so that outdoor ambient temperature does not affect the reading. Indoor air cfm must be within the normal operating range of the unit.

TO USE COOLING CHARGING CHART — Take the outdoor ambient temperature and read the suction pressure gage. Refer to chart to determine what suction temperature should be. If suction temperature is high, add refrigerant. If suction temperature is low, carefully blow some of the charge. Recheck the suction pressure as charge is adjusted.

Example: 50CD/CH008 (Fig. 28)

Outdoor Temperature ..... 85 F
Suction Pressure ..... 70 psig
Suction Temperature should be ..... 52 F
(Suction Temperature may vary ± 5 F.)

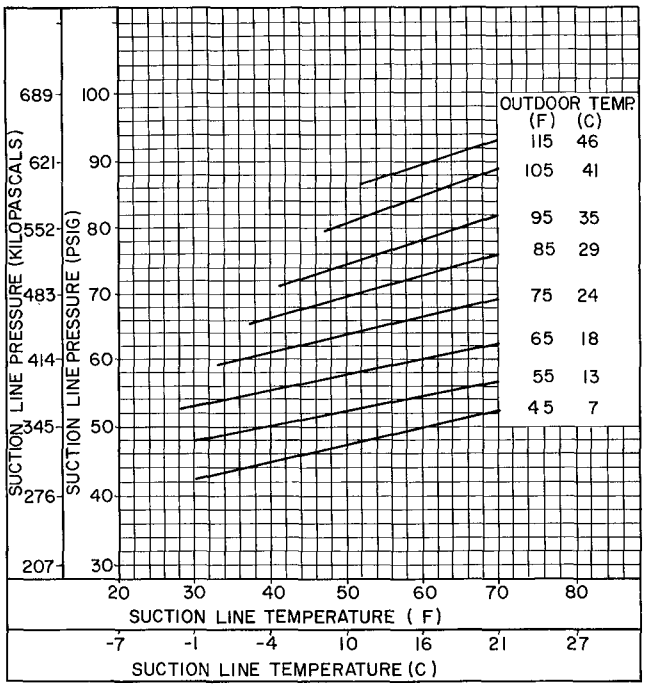


Fig. 28 — 50CD/CH008 Cooling Charging Chart

If Chargemaster® charging device is used, temperature and pressure readings must be accomplished using the charging chart.